

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Fidelity Exploration & Production Company

Well Name/Number: Lisa 22-23H

Location: NW SW Section 22 T22N R57E

County: Richland, **MT;** **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: 35-40 days drilling time for a single lateral horizontal Upper Bakken Shale Formation test.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a vertical pilot hole to 10,500' TD in the Nisku Formation. Plugback and kick off and drill a Upper Bakken Shale Formation, 19,999'MD/10,381' TVD /single lateral horizontal well test.

Possible H₂S gas production: H₂S gas production is slight (Mississippian Formations).

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns, proper BOP stack should mitigate any concerns. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns. Triple derrick drilling rig to drill a vertical pilot hole to 10,500' TD in the Nisku Formation. Plugback and kick off and drill a Upper Bakken Shale Formation, 19,999'MD/10,381' TVD /single lateral horizontal well test. If there are no gas gathering systems in this area, associated sweet gas and H₂S gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling fluids to drill vertical pilot hole and intermediate casing string hole and saltwater to drill horizontal lateral. Surface casing hole will be drilled with freshwater and freshwater drilling fluids.

High water table: No high water table anticipated in the area of review.

Surface drainage leads to live water: None, closest drainages are unnamed ephemeral tributary drainages to Fox Creek, about 1/4 of a mile to the southwest, about 3/8 of a mile to the south, about 3/8 of a mile to the southeast and about 1/2 of a mile to the southeast from this location. Also, an unnamed ephemeral tributary to the North Fork Fox Creek, about 1/8 of a mile to the north from this location.

Water well contamination: No, closest water wells are about 1/2 of a mile to the northwest and about 1/2 of a mile to the southeast from this location. Depth of these stockwater wells are 113' and 260'. Surface hole will be drilled with freshwater.

Estimated required amount of surface casing at this location is 1793'. Will require 1793' of surface casing will be set and cemented to surface.

Porous/permeable soils: No, sandy silty clay soils.

Class I stream drainage: No Class I stream drainage in the area of review.

Mitigation:

- ☒ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☒ Closed mud system
- ☒ Off-site disposal of solids/**liquids** (in approved facility)
- ☐ Other: _____

Comments: 1793' of surface casing cemented to surface is adequate to protect freshwater zones. Also, fresh water mud systems to be used on surface hole.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: Possible erosion potential, moderate cut, up to 13.4' and moderate fill, up to 15.8', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: Large, 470'X470' location size required.

Damage to improvements: Slight, surface use is cultivated land.

Conflict with existing land use/values Slight

Mitigation

- ☐ Avoid improvements (topographic tolerance)
- ☐ Exception location requested
- ☒ Stockpile topsoil
- ☐ Stream Crossing Permit (other agency review)
- ☒ Reclaim unused part of wellsite if productive
- ☐ Special construction methods to enhance reclamation
- ☐ Other: _____

Comments: Access will be over existing county road, #120 and existing private surface roads. Will construct about 1/4 of a mile of new access into this location off the existing private surface road. Drilling fluids and completion fluids will be hauled to a commercial disposal. Oil based invert drilling fluids will be recycled. Solids will be allowed to dry in the lined cuttings pit. When dry the cuttings pit liner will be folded over the top of the solids, spoil dirt to fill pit, top soil spread over pit area, and seeded to land owners specification. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences within a 1 mile radius from this well location.

Possibility of H₂S: H₂S chance is slight from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 35 to 40 days drilling time.

Mitigation:

- ☒ Proper BOP equipment
- ☐ Topographic sound barriers
- ☐ H₂S contingency and/or evacuation plan
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: Adequate surface casing and operational BOP should mitigate any problems. (BOP's 5,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified

Proximity to recreation sites: None identified

Creation of new access to wildlife habitat: None

Conflict with game range/refuge management: Closest game management area is Fox Lake State Game Management Area, about 11.9 miles to the northwest from this location.

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Least Tern, Piping Plover and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse and Sprague's Pipit. NH tracker website for this Township and Range lists one (1) species of concern: Whooping Crane.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: Private cultivated land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

Comments: On private cultivated land. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: Wildcat well test. No concerns.

Remarks or Special Concerns for this site

Well will be drilled as a vertical pilot hole to 10,500' TD in the Nisku Formation.
Plugback and kick off and drill a Upper Bakken Shale Formation, 19,999'MD/10,381'
TVD /single lateral horizontal well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\Steven Sasaki
(title:) Chief Field Inspector
Date: July 14, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)
Richland County water wells
(subject discussed)
July 14, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Richland County
(subject discussed)

July 14, 2012
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T22N R56E
(subject discussed)

July 14, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____